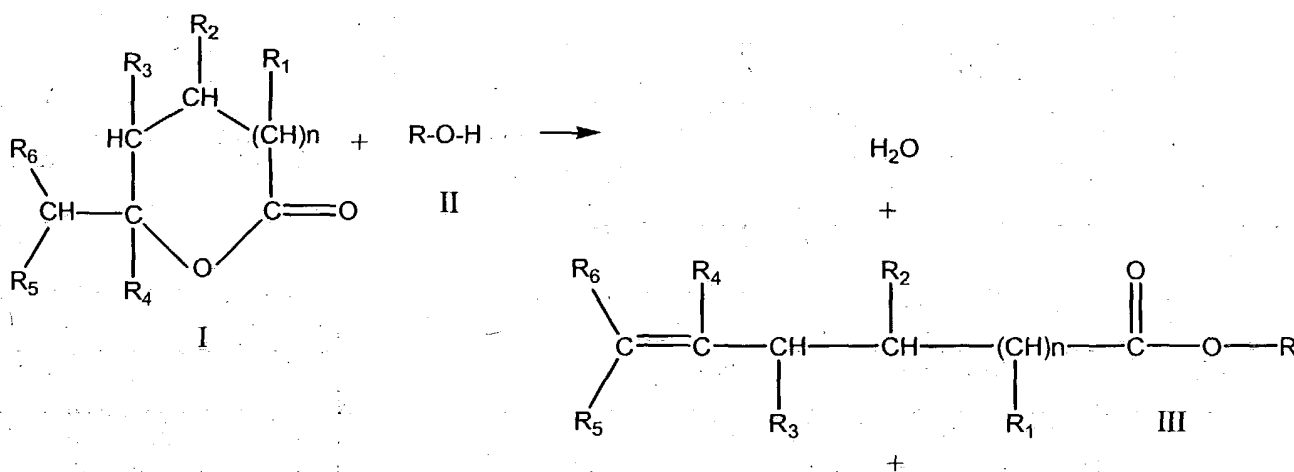


CLAIMS

What is claimed is:

1. A process for preparing alkyl alkenoate ester represented by Formula III, comprising contacting a lactone of Formula I with an alkanol of Formula II in the presence of a heterogeneous base catalyst, the base catalyst being optionally supported on a catalyst support, to form the corresponding alkyl alkenoate ester,



wherein:

10 $n = 0-2$;

R₁, R₂, R₃, and R₄, independently are hydrogen, hydrocarbyl or substituted hydrocarbyl, C₁-C₁₈ unsubstituted or substituted alkyl, unsubstituted or substituted alkenyl, unsubstituted or substituted cycloalkyl, unsubstituted or substituted cycloalkyl containing at least one heteroatom, unsubstituted or substituted aryl, and

15 unsubstituted or substituted heteroaryl;

R₅ and R₆ taken independently are hydrogen or alkyl with 1 to 5 carbon atoms, wherein the total number of carbons of R₅ and R₆ do not exceed 5; and

R is alkyl with 1 to 6 carbon atoms.

2. The process as recited in Claim 1 wherein $n=0$ and R₁, R₂, R₃, R₄, R₅, and R₆, taken independently, are hydrogen.

3. The process as recited in Claim 2 wherein R is a methyl group.

4. The process as recited in Claim 1 wherein the lactone is gamma-valerolactone and the alkanol is methanol.

5. The process as recited in Claim 1 or Claim 4 wherein the ratio of weight content of the lactone to the alkanol is in the range of from 1/100 to 100/1.

6. The process as recited in Claim 1 or Claim 4 wherein the ratio of weight
5 content of the lactone to the alkanol is in range of from 40/60 to 60/40.

7. The process as recited in Claim 1 wherein the base catalyst is selected from the group consisting of metal silicates, metal carbonates, metal oxides, metal hydroxides, metal phosphates, metal aluminates or combinations thereof.

8. A process as recited in Claim 1 wherein the base catalyst is selected from the
10 group consisting of Group 1, Group 2 or rare earth silicates; Group 1, Group 2 or rare earth oxides; Group 1, Group 2 or rare earth carbonates; and combinations thereof.

9. The process as recited in Claim 1 wherein the process is performed at a temperature in the range of from 250°C to 500°C.

15 10. The process as recited in Claim 1 wherein the process is performed at a temperature in the range of from 325°C to 400°C.

11. The process as recited in Claim 6 wherein said metal is selected from the group consisting of barium, cesium, rubidium and magnesium.

12. The process as recited in Claim 7 wherein the base catalyst content is of from
20 about 1% to about 30% by weight of the reactants.

13. The process as recited in Claim 7 wherein the base catalyst content is of from about 10% to about 25% by weight of the reactants.

14. The process as recited in Claim 7 wherein the base catalyst content is of from about 12% to about 22% by weight of the reactants.

25 15. The process as recited in Claim 1 wherein the process is performed in a vapor phase.